

COLLISION AVOIDANCE SYSTEM (Reissue) Serial # 09/892,185 GAU 3661 Examiner Eric M. Gibson

7/1/04

Applicant Brett O. Hall 4206 Lazy Creek Dr. Marietta, GA 30066 770-517-6135; Responsive to 6/24/04 phone call

**CORRESPONDENCE COVER**

In the United States Patent and Trademark Office

Serial Number: 09/892,185  
Application Filed: June 26, 2001  
Applicant: Brett O. Hall  
Application Title: COLLISION AVOIDANCE SYSTEM (Reissue Application)  
Examiner / GAU: Eric M. Gibson / 3661 at phone # 703-306-4545  
Date: July 1, 2004  
Faxed To: Eric Gibson, 703-746-3603  
Pages: 10

Assistant Commissioner for Patents  
Washington, DC 20231

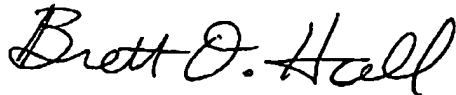
Sir:

This submittal is responsive to the 6/24/04 phone call from the Examiner to revise the declaration and provide a copy of all reissue claims that are changes from the original claims. This response is submitted directly to Examiner Eric Gibson (per his instruction) for his review and self-entry. Enclosed are the following:

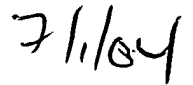
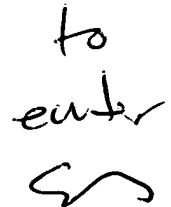
	Pages
Correspondence cover (this page)	1
Reissue Declaration (revised)	1
Reissue Claims (without unchanged claim 6)	8

Please address any questions to the Applicant as indicated below.

Respectfully Submitted,



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OK to  
enter  
7/1/04

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

This submittal is first responsive to the 6/24/04 telephone call from the Examiner to revise the declaration and provide a copy of all reissue claims that are changes from the original claims. The submittal is secondarily responsive to the phone message by the Examiner on 7/1/04 that the second page of the declaration was not included with the earlier submission. The claims are not submitted again in this response. This response is submitted directly to Examiner Eric Gibson (per his instruction) for his review and self-entry. Enclosed are the following:

	Pages
Correspondence cover (this page)	1
Reissue Declaration (revised and includes 2 <sup>nd</sup> page)	2

Please address any questions to the Applicant as indicated below.

Respectfully Submitted,

*Brett O. Hall*

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## FINAL REISSUE CLAIMS

### CLAIMS

What I claim as my invention is:

1. A collision avoidance system[,] for use involving at least one vehicle, said collision avoidance system comprising:
  - a) [a plurality of vehicle trigger sensors each] at least one trigger sensor associated with a roadway, [each said vehicle] said at least one trigger sensor capable of sensing at least one parameter [of one or more vehicles];
  - b) [a plurality of vehicle restrictors each] at least one vehicle restrictor associated with said roadway, [each said] said at least one restrictor comprising a[n elongate] member disposed generally transverse to said roadway, each said restrictor capable of being actuated [to raise or lower relative to said roadway surface] to impede passage thereover [of said] of the at least one vehicle[s]; and
  - c) a controller programmed to determine [the] an increased likelihood of a collision [between] involving any of [said] the at least one vehicle[s] based on said [vehicle] parameter[s] received from or by said trigger sensor[s], programmed to determine [which of a selected one or more of said vehicles] that the at least one vehicle should be slowed or stopped [to avoid said collision] based on said [vehicle] parameter[s and based on local traffic laws], and programmed to determine at least one [selected] vehicle restrictor that is being approached by [said selected] the at least one vehicle, wherein said at least one [selected] vehicle restrictor is actuated by communication from said controller to impede the passage of [said selected] the at least one vehicle [to avoid said collision].
2. The collision avoidance system of claim 1, wherein said at least one [vehicle] parameter is selected from the group [consisting] comprised of vehicle presence, position, direction, or speed.
3. The collision avoidance system of claim 1, wherein said at least one trigger sensor is selected

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from the group **[consisting of] of technologies capable of detecting vehicle parameters**  
**comprising** radar devices, lasers, optical devices, ultrasonic devices, induction loop devices, wireless transmitters and receivers, pressure-responsive switches, **[and] or** combinations thereof.

4. The collision avoidance system of claim 1, **[wherein said] further comprising** at least one **[trigger sensor comprises an]** environmental sensor to indicate roadway moisture or sight visibility.

5. The collision avoidance system of claim 4, wherein said controller is programmed to determine said **increased** likelihood of said collision further based on roadway surface friction loss due to moisture or sight visibility loss, **[due to moisture]** as communicated to said controller from said environmental sensor.

6. (Unchanged from original claims).

7. The collision avoidance system of claim 1, further comprising a control that receives said **[vehicle]** parameter comprising the speed of **[said selected] the at least one** vehicle and that determines an amount of **[raising or lowering of the selected]** vehicle restrictor **activation** which **[amount]** is selected to be sufficient to slow or stop the **at least one** vehicle **[to avoid said collision]**.

8. The collision avoidance system of claim 1, further comprising a monitoring device associated with said roadway and in **[real time]** communication with emergency law enforcement, medical, **[or]** fire department **or other predetermined** personnel.

9. The collision avoidance system of claim 8, wherein said at least one monitoring device comprises **[a] at least one** camera.

10. The collision avoidance system of claim 1, further comprising **[an] at least one** emergency vehicle pass-through control that deactivates the actuation of **[the] said at least one** vehicle restrictor[s] in response to a communication from an emergency law enforcement, medical, or fire department vehicle **or other predetermined vehicle or person**.

Reissue Claims (w/o Claim 6): Page 2 of 8

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11. The collision avoidance system of claim 1, further comprising:
- a) **[a plurality of] at least one pedestrian trigger sensor[s each]** associated with said roadway, each said pedestrian trigger sensor capable of sensing at least one parameter of one or more pedestrians; **and**
  - b) **[at least one alarm associated with said roadway to alert operators of said vehicles of an approaching pedestrian to avoid collision; and]**
  - c) said controller programmed to determine **[the] an increased** likelihood of a collision between said pedestrian and **[any of said vehicles, and to select and activate said alarm] the at least one vehicle** and to **[select and]** activate said **[selected]** vehicle restrictor **[immediately]** in the path of **[said selected] the at least one** vehicle.
12. The collision avoidance system of claim 11, wherein said **at least one** pedestrian parameter[s] comprises the presence, position, speed, or direction of the sensed pedestrian.
13. The collision avoidance system of claim 11, **[wherein] further comprising** at least one alarm associated with said roadway **[alerts said pedestrians of an approaching vehicle to avoid] wherein said at least one alarm provides notification of potential vehicle-to-pedestrian** collision.
14. The collision avoidance system of claim 1, further comprising:
- a) **[a plurality of] at least one train trigger sensor[s each]** associated with said roadway, each said train trigger sensor capable of sensing at least one parameter of one or more trains; **and**
  - b) **[a plurality of alarms associated with said roadway to alert operators of said vehicles of an approaching train to avoid collision; and]**
  - c) said controller programmed to determine **[the] an increased** likelihood of a collision between said train and **[any of said vehicles, and to select and activate said alarm] the at least one vehicle** and to **[select and]** activate said **[selected]** **at least one** vehicle restrictor **[immediately]** in the path of **[said selected] the at least one** vehicle.

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15. The collision avoidance system of claim 14, wherein said at least one train parameter[s] comprises the presence, position, speed, or direction of the sensed train.

16. A method for collision avoidance[,] for use involving at least one vehicle, comprising the steps of:

- a) sensing at least one parameter[s] of a plurality of vehicles;
- b) determining [the] that there is an increased likelihood of a collision involving [any of said vehicles] the at least one vehicle based on said at least one [vehicle] parameter[s];
- c) determining [which of a selected one or more of said vehicles] that at least one vehicle should be slowed or stopped [to avoid said collision] based on said at least one [vehicle] parameter[s] and local traffic laws;
- d) determining at least one [selected] vehicle restrictor[, of a plurality of vehicle restrictors] in a roadway, that is being approached by [said selected] the at least one vehicle based on said at least one [vehicle] parameter[s] and said vehicle restrictor location[s]; and
- e) actuating said [selected] vehicle restrictor to control [the parameters of] said [selected] vehicle [to avoid said collision].

17. The collision avoidance method of claim 16, wherein said at least one [vehicle] parameter[s] comprises the presence, position, speed, or direction of the [sensed] at least one vehicle.

18. The collision avoidance method of claim 16, further comprising the steps of:

- a) sensing at least one parameter[s] of at least one pedestrian;
- b) determining [the] that there is an increased likelihood of a collision between said at least one pedestrian and any of [said] the at least one vehicles based on said at least one parameter; and
- [c] [actuating at least one alarm to alert an operator of said vehicle of said approaching vehicle to avoid such a collision.]

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**c) actuating at least one vehicle restrictor in a roadway to control said at least one vehicle to be slowed or stopped to reduce the increased likelihood of a collision with at least one pedestrian.**

19. The collision avoidance method of claim 18, wherein said **at least one** pedestrian parameter[s] comprises the presence, position, speed, or direction of the sensed pedestrian.

20. The collision avoidance method of claim 16, further comprising **the steps of:**

- a) sensing **at least one** parameter[s] of at least one train;
- b) determining [the] **that there is an increased** likelihood of a collision between said **at least one** train and any of [said] **the at least one** vehicles **based on said at least one parameter; and**
- c) actuating **at least one** vehicle restrictor[s] in a roadway to control [the parameters of said] **the at least one** vehicle to be slowed or stopped to [avoid said] **reduce the increased likelihood of a collision with at least one train. [; and]**
- d) [actuating at least one alarm to alert an operator of said vehicle of said approaching train to avoid such a collision.]

21. The collision avoidance method of claim 20, wherein said **at least one** train parameter[s] comprises the presence, position, speed, or direction of the sensed train.

**22. The collision avoidance system of claim 1, further comprising a control means to adjust at least one operational parameter, whereby system responses are changed.**

**23. A collision avoidance system for enforcing local traffic laws or rules for use with a traffic control means that is representative of the local traffic laws or rules, capable of displaying a permissive or a non-permissive indicia, said system of collision avoidance, comprising:**

- a) **at least one vehicle restrictor associated with a roadway, said at least one vehicle restrictor comprising a member disposed generally transverse to said roadway, capable of being actuated to impede passage thereover of at least one vehicle; and**

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**b) a controller that determines an increased likelihood of vehicular collision relative to the status of the traffic control means wherein said controller determines that the at least one vehicle should be slowed or stopped and wherein said at least one vehicle restrictor may be actuated by communication from said controller to impede the passage of the at least one vehicle.**

**24. A method of collision avoidance for enforcing local traffic laws or rules for use with a traffic control means that is representative of the local traffic laws or rules, capable of displaying permissive or non-permissive indicia, said method of collision avoidance comprising the steps of:**

- a) determining the permissive status of the traffic control means that is associated with a roadway;**
- b) determining that at least one vehicle should be slowed or stopped as to reduce the increased likelihood of vehicular collision relative to local traffic laws or rules and status of the traffic control means; and**
- c) impeding movement of the at least one vehicle associated with the roadway by actuating at least one vehicle restrictor when the status of the traffic control means is not permissive.**

**25. A method of collision avoidance, comprising the steps of:**

- a) sensing at least one parameter of at least a first vehicle;**
- b) sensing at least one parameter of at least a second vehicle;**
- c) determining that there is an increased likelihood of a collision involving said at least first vehicle and said at least second vehicle based on said vehicle parameters; and**
- d) determining that at least one vehicle should be slowed or stopped; and**
- e) actuating at least one vehicle restrictor to impede the movement of at least one of said vehicles.**

**26. A method of collision avoidance, comprising the steps of:**

Reissue Claims (w/o Claim 6): Page 6 of 8



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- a) sensing at least one parameter of at least one vehicle;
- b) sensing at least one parameter of at least one pedestrian or at least one train;
- c) determining that there is an increased likelihood of a collision involving said at least one vehicle with said at least one pedestrian or said at least one train based on said at least one vehicle parameter and said at least one pedestrian or train parameter;
- d) determining that at least one vehicle should be slowed or stopped; and
- e) actuating at least one vehicle restrictor to impede the movement of at least one of said vehicles.

27. The collision avoidance system of claim 1, wherein said parameter is associated with one or more vehicles.

28. The collision avoidance system of claim 1, wherein said parameter is associated with said traffic control means.

29. The collision avoidance system of claim 28, wherein said traffic control means is selected from the group comprising traffic light, caution indicator, school bus indicator, bi-directional light, alphanumeric display, pedestrian crosswalk indicator, train signal, traffic sign, traffic gate, traffic barrier, traffic director, traffic timer or combinations thereof.

30. The method for collision avoidance of claim 16, wherein said parameter is associated with one or more vehicles.

31. The method for collision avoidance of claim 16, wherein said parameter is associated with a traffic control means.

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**32. The method for collision avoidance of claim 31, wherein said traffic control means is selected from the group comprising traffic light, caution indicator, school bus indicator, bi-directional light, alphanumeric display, pedestrian crosswalk indicator, train signal, traffic sign, traffic gate, traffic barrier, traffic director, traffic timer or combinations thereof.**

PTO/SB/51 (07-200)

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<b>REISSUE APPLICATION DECLARATION BY THE INVENTOR</b>	Docket Number (Optional)
--	--------------------------

I hereby declare that:  
Each inventor's residence, mailing address and citizenship are stated below next to their name.  
I believe the inventors named below to be the original and first inventor(s) of the subject matter which is described and claimed in patent number 0,223,125 B1 granted April 24, 2001 and for which a reissue patent is sought on the invention entitled Collision Avoidance System

the specification of which

☐ is attached hereto.

☒ was filed on June 26, 2001 as reissue application number 09/892,185  
and was amended on 4-26-04 (most recently)  
(If applicable)

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.  
I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

☐ I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b). Attached is form PTO/SB/02B (or equivalent) listing the foreign applications.

I verily believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.)

☐ by reason of a defective specification or drawing.

☒ by reason of the patentee claiming more or less than he had the right to claim in the patent.

☒ by reason of other errors.

At least one error upon which reissue is based is described below. If the reissue is a broadening reissue, such must be stated with an explanation as to the nature of the broadening:

In original claims 1 and 16 the error was the undue restriction of the invention by using the language "*a plurality of vehicle restrictors*". Reissue claims 1 and 16 corrected this error by broadening the language to "*at least one vehicle restrictor*".

In the original claims the error was inadequate coverage of the invention's responsiveness / integration with traffic laws / rules. Reissue claims 23 and 24 corrected this error.

In original claims 1 and 16 the error was the undue restriction of the invention by using the language "*a plurality of vehicle restrictors*". Reissue claims 25 and 26 also corrected this error by excluding the mentioning of components.

(Page 1 of 2)

This collection of information is required by 37 CFR 1.175. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-0199 and select option 2.

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(REISSUE APPLICATION DECLARATION BY THE INVENTOR, page 2)				Docket Number (Optional)	
All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant.					
Note: To appoint a power of attorney, use form PTO/SB/81.					
Correspondence Address: Direct all communications about the application to:					
<input type="checkbox"/> Customer Number: <input type="text"/>					
OR					
<input type="checkbox"/> Firm or Individual Name		Brett O. Hall			
Address		4206 Lazy Creek Dr			
Address					
City		State	GA	GA	Zip
Country		USA			
Telephone		770-517-6135		Fax	770-517-6135
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.					
Full name of sole or first inventor (given name, family name) Brett Osmond Hall					
Inventor's signature		Brett O. Hall		Date	
Residence		4206 Lazy Creek Dr Marietta, GA 30066		Citizenship	
Mailing Address		4206 Lazy Creek Dr. Marietta, GA 30066			
Full name of second joint inventor (given name, family name)					
Inventor's signature		Date			
Residence		Citizenship			
Mailing Address					
Full name of third joint inventor (given name, family name)					
Inventor's signature		Date			
Residence		Citizenship			
Mailing Address					
<input type="checkbox"/> Additional joint inventors or legal representative(s) are named on separately numbered sheets forms PTO/SB/02A or 02LR attached hereto.					

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